

Council/Agency Meeting Held: _____	_____ City Clerk's Signature
Deferred/Continued to: _____	
<input type="checkbox"/> Approved <input type="checkbox"/> Conditionally Approved <input type="checkbox"/> Denied	
Council Meeting Date: 4/2/2007	Department ID Number: BD 2007-2

**CITY OF HUNTINGTON BEACH
REQUEST FOR CITY COUNCIL ACTION**

SUBMITTED TO: HONORABLE MAYOR AND CITY COUNCIL

SUBMITTED BY: *Penelope Culbreth Graft*
PENELOPE CULBRETH-GRAFT, CITY ADMINISTRATOR

PREPARED BY: ROSS CRANMER, DIRECTOR OF BUILDING AND SAFETY *Ross Cranmer*

SUBJECT: SOLE SOURCE APPROVAL FOR SEISMIC BRACES FOR CITY HALL

Statement of Issue, Funding Source, Recommended Action, Alternative Action(s), Analysis, Environmental Status, Attachment(s)

Statement of Issue:

The Department of Building and Safety is working on seismically retrofitting the City Hall Administration Building. The seismic braces that have been specified by the design engineers are proprietary and thus sole source. Administrative Regulation 229 requires council approval for any sole source that exceeds \$50,000.

Funding Source:

N/A

Recommended Action:

Motion to:

1. "Approve the Sole Source Justification document pursuant to Administrative Regulation 229."

Alternative Action(s):

1. "Deny the request and direct staff accordingly."

E-2

REQUEST FOR CITY COUNCIL ACTION

MEETING DATE: 4/2/2007

DEPARTMENT ID NUMBER: BD 2007-2

Analysis:

The structural engineering firm, Saiful/Bouquet (SBI) was hired by the City to prepare the analysis and design of the seismic retrofit of City Hall. SBI prepared the attached letter dated August 23, 2006 that outlines the justification for having to choose a specific manufactured seismic brace system. This letter presents the reasons for having to choose one of the three brace systems that are currently manufactured in the world. The second letter dated August 28, 2006, presents the justification for choosing the product manufactured by Nippon Steel and distributed by Mitsui Steel Corp. Based on the consultant's recommendation, the Director of Building and Safety authorized SBI to proceed with the design using the Nippon Steel Brace Specifications.

The design calculations and drawings are approximately 95% complete thus the Nippon Frames were designed and we negotiated the brace pricing with Mitsui Steel Corporation to assure a competitive price. In subsequent steps, the city will be accepting construction bids for this project. As part of this contract, we will require the general contractor to procure the specified braces directly in order to make the general responsible for all constructability issues. Already having negotiated a price and having the City Council's approval for sole source will assure that the braces will not adversely affect the project construction schedule. If we were to change to one of the other brace manufactures, SBI would have to reanalyze the complicated dynamic analyses and cause a delay in the project.

The sole source approval is required since when the General Contractor does contract with Nippon Steel for the braces and the cost will be more than \$50,000.

The attached Sole Source Justification Form includes all the supporting letters from our consultants and has been signed by the Building and Safety Director, Central Services Manager, Finance Director and Deputy City Administrator. The attached request for Qualifications and Pricing from Mitsui Steel is only for information.

Environmental Status: N/A

Attachment(s):

City Clerk's Page Number	No.	Description
3	1.	Sole Source Justification Form with all supporting letters and signed by the appropriate departments.
17	2.	Request for Qualifications and Pricing--Mitsui Steel, Inc.

ATTACHMENT 1

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CITY OF HUNTINGTON BEACH

Sole Source Justification

(For use on all goods and services acquisitions.)

This justification document consists of two (2) pages. All information must be provided and all questions must be answered. The "Required Approvals" section must include a date for each signature, as appropriate for the transaction.

Requesting Department Information

Date: November 17, 2006	
Requestor Name: Ross Cranmer	Division Manager: N/A (Type names. Do not sign.)
Department: Building and Safety	Department Head: Ross Cranmer (Type names. Do not sign. Must be same as signature below.)

Department Contact Information

Contact Name: Ross Cranmer	Street Address: 2000 Main Street
Telephone: (714) 536-5532	
Fax: (714) 374-1648	Shipping Address: 2000 Main Street
Cellular phone:	

Required Contact Information

Contractor/Supplier Name: Mitsui Steel Corp.		
Contractor/Supplier Address: 601 South Figueroa St, Suite 1900		
Contractor/Supplier City/State/Zip: Los Angeles, Ca 90017		
Original Contract Amount:* \$167,440 <small>(*Includes original contract and previously approved amendments)</small>	Amendment Amount:* (if applicable) \$N/A <small>(*Current amendment only)</small>	New Contract Amount: * \$N/A <small>(*Includes original contract and all amendments, including current amendment)</small>

Provide a brief description of the acquisition, including all goods and/or services the contractor will provide:
 The Department of Building and Safety is working on seismically retrofitting the City Hall Administration Building. The goods that are being proposed to be sole source are proprietary steel braces called buckling restrained braced frames (BRBF's). There are 40 braces in total that are specified in the structural drawings prepared by Saiful/Bouquet Structural Engineers.

Contract Type and Term

Contract Type: Select One: <input checked="" type="checkbox"/> Goods <input type="checkbox"/> Service <input type="checkbox"/> Goods & Services	Contract Term: Begin: summer '07 End: fall '08	What account number will be used to purchase? Business Unit: Object Code:
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Required Approvals

Department Head <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied Signature/Date 1/4/09	Central Services Manager <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied Signature/Date	Finance Director <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied Signature/Date	Deputy City Administrator <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied Signature/Date (Transactions exceeding \$50,000 must be approved by council)
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CITY OF HUNTINGTON BEACH

Sole Source Justification

(For use on all goods and services acquisitions.)

Complete responses must be provided for all of the following items.

A. THE GOOD/SERVICE REQUESTED IS RESTRICTED TO ONE SUPPLIER FOR THE REASONS STATED BELOW:

1. Why is the acquisition restricted to this goods/services/supplier?

(Explain why the acquisition cannot be competitively bid.)

The structural engineering firm Saiful/Bouquet (SBI) was hired to prepare the analysis and design of the seismic retrofit of City Hall. SBI prepared the attached letter dated August 23, 2006 that outlines that a specific manufactured brace system had to be selected in order to proceed with the design of the retrofit. This letter essentially said we needed to choose between the 3 brace systems that are currently manufactured in the world and the second letter attached and dated August 28, 2006, recommended that we choose the product manufactured by Nippon Steel and distributed by Mitsui Steel Corp. The third and fourth letters attached are from the peer review engineering firm IDS that the City hired to review SBI's work and they agree with SBI that a manufacturer needed to be chosen to proceed and they did not object to proceeding with the design based on Nippon's braces. Based on this information from our consultants I authorized them to proceed with the design using the Nippon Steel brace specifications.

2. Provide the background of events leading to this acquisition.

The type of brace system that is being proposed is specified in the analysis and design drawings for the seismic retrofit of the City Hall Administration Building. Saiful/Bouquet Structural Engineers are recommending the Nippon brace system as the best match for our seismic retrofit.

3. Describe the uniqueness of the acquisition (why was the good/service/supplier chosen?).

See #1

4. What are the consequences of not purchasing the goods/services or contracting with the proposed supplier?

If we go out to bid for all the 3 possible manufactured systems and the Nippon product is not chosen our consultants are telling us that the analysis would have to be redone with subsequent modifications to the drawings that would take a substantial amount of time and money. Given the extra cost in engineering, material costs and our concern with meeting FEMA's project deadline, the best approach was to predetermine the brace we will use.

5. What market research was conducted to substantiate no competition, including evaluation of other items considered?

(Provide a narrative of your efforts to identify other similar or appropriate goods/services, including a summary of how the department concluded that such alternatives are either inappropriate or unavailable. The names and addresses of suppliers contacted and the reasons for not considering them must be included OR an explanation of why the survey or effort to identify other goods/services was not performed.)

The second letter from Saiful/Bouquet that is attached and dated August 28, 2006 reviews the 3 products available and made the determination that the Nippon product is the best choice.



CITY OF HUNTINGTON BEACH

Sole Source Justification

(For use on all goods and services acquisitions.)

B. PRICE ANALYSIS

1. How was the price offered determined to be fair and reasonable?

(Explain what the basis was for comparison and include cost analyses as applicable.)

Costs for other projects.

**2. Describe any cost savings realized or costs avoided by acquiring the goods/services from this supplier.
Answer to A 5 mentions costs avoided would be engineering, material costs and time which would be the costliest of all.**

Remit completed form to:

City of Huntington Beach - Central Services Division
2000 Main Street, Huntington Beach, CA 92648-2702



August 23, 2006

Mr. Ross Cranmer
Director of Building & Safety Department
City of Huntington Beach
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648

Subject: Need for Sole Source Buckling Restrained Brace Manufacturer
Huntington Beach City Hall Admin Building Seismic Retrofit
SBI Job No.: 06591

Dear Mr. Cranmer,

The seismic retrofit project for the Huntington Beach City Hall Administration Building is scheduled to start construction mid-year 2007 and the design for the project is currently underway. At this time, Saiful/Bouquet, Inc. (SBI) is scheduled to submit 100% Construction Documents to the City for bidding purposes in mid-January. After considering several alternate retrofit schemes, which included adding exterior and/or interior concrete shear walls and exterior conventional steel braced-frames, a seismic strengthening scheme consisting of the addition of new buckling restrained braced frames (BRBF's) has been selected for use on this project and approved by the City. At this time, SBI needs to receive direction from the City regarding the specific manufacturer of the BRB's that will be used in construction for this project.

Background

The BRBF system is a specialized version of the conventional concentrically braced frame. In a traditional concentric braced frame, the seismic energy is dissipated through the braces buckling in compression and yielding in tension; however, this behavior is characterized by significant degradation of strength and stiffness during cyclic loading. The braces of a BRBF are constructed by encasing core steel plates within a mortar-filled hollow steel tube, such that buckling is prevented. The steel core plates are overlaid by a de-bonding material that effectively de-couples the axial strength and stiffness from the flexural buckling behavior of the brace. By preventing buckling of the braces, this allows the braces to yield in tension and compression thereby dissipating energy through stable non-degrading hysteretic behavior. Furthermore, the buckling restrained braces do not exhibit the large deformations associated with buckling in conventional braced frame systems.

The selection of the exterior BRBF system provides several advantages for this project over other retrofit schemes, including the following:

1. The BRB's have a greater compression capacity and do not exhibit strength degrading behavior compared to that of conventional braces. As a result, a fewer number of braces and braced frame bays are needed to meet the desired seismic performance objectives for this building, resulting in a more cost effective strengthening scheme.

E2.7

2. BRB's do not have aesthetically unacceptable post-buckling deformations that are associated with conventional braced frames.
3. The use of braces minimizes obstruction to office views and provides openness to allow for natural light compared to that of a conventional shear wall scheme.

Design of the BRBF System

The BRBF system concept is a proprietary system that is currently supplied in the United States by three main manufacturers: (1) Nippon Steel Engineering Co., (2) CoreBrace, and (3) Star Seismic. The BRB's manufactured by each of these three companies are similar in concept; however, each has specific details that will have an impact on the analysis and design of the retrofit scheme and therefore, selection of the brace manufacturer must be made in the initial phase of the design and cannot be delayed until the bid has been awarded. The following presents the primary effects that the selection of the brace manufacturer has on the analysis and design of the retrofit scheme.

1. Buckling-restrained braces consist of core steel plates that have a minimum cross-section area along the central portion of the brace where yielding will take place and are tapered at the ends to the connections. Each of the BRB manufacturers have developed a specific design philosophy for determining the geometry of these core plates and the construction of the buckling restraint mechanism and have performed laboratory testing on braces to justify these philosophies and obtain the maximum axial strain demands that the braces are capable of withstanding before deterioration. The computer model of the building, with the new BRBF system, requires input from the brace manufacturer regarding the length of the yielding segment of the brace based on the specific geometry of the braced frames. The results from the analyses provide the maximum axial strain demands on the braces which must be verified with the strain capacity of the braces based on the manufacturer's test results. If the selection of the brace manufacturer is delayed until after the bid has been awarded, then the computer analysis of the retrofitted building may need to be repeated and the design may need to be changed.
2. The BRB's are intended to be the weakest link in the braced frames and therefore, the connections, beams, columns and foundations are designed based on the maximum capacity of the braces. The maximum brace capacity is dictated by two primary factors: (1) The maximum steel yield material used and (2) the influence of the de-bonding material and mortar on the compression capacity of the brace. Each of these variables varies amongst the different brace manufacturers. The maximum steel yield strength depends on the steel material specification that is used in the construction of the braces and the influence of the mortar and de-bonding material on the compression capacity is determined from the laboratory testing. As a result, the design of all of the elements of the braced frames is influenced by the selection of the brace manufacturer.
3. Each brace manufacturer has a different configuration for the connection of the brace to the gusset plates of the braced frame. The brace-to-gusset plate connection configuration will influence the design of the gusset plates and the connection of the gusset plates to the beams and columns of the braced frames. The connections and gusset plates are part of the bid documents and therefore, need to be determined during the design process and cannot be delayed until construction.

Mr. Ross Cranmer
August 23, 2006
Page 3/3

Huntington Beach City Hall Admin Building Seismic Retrofit
Need for Sole Source Buckling Restrained Brace Manufacturer

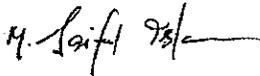
For these reasons, SBI is requesting that the City provide direction regarding the specific brace manufacturer that will be used in construction for this project. Without selecting a specific BRB manufacturer, we are unable to conduct an analysis of the retrofit scheme and complete the design of the structural system.

We will sending to you a follow-up letter that provides you with some background about the various buckling restrained brace manufacturers and with our recommendation for the selection of the manufacturer for this project.

Please do not hesitate to contact us should you questions or need anything else from us.

Sincerely,

SAIFULBOUQUET, Inc.



Saiful Islam, Ph.D., S.E.
Managing Principal & President

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August 28, 2006

Mr. Ross Cranmer
Director of Building & Safety Department
City of Huntington Beach
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648

Subject: Background and Recommendation for Selection of Buckling Restrained Brace Manufacturer

Dear Mr. Cranmer,

As a follow-up to our letter to you on August 23, 2006 regarding our need for direction from the City related to the selection of a buckling restrained brace manufacturer for the Huntington beach City Hall Administration Building seismic retrofit project, we are writing this letter to provide you with more background information for each of the primary brace manufacturers along with our recommendation.

As mentioned in our previous letter, the buckling restrained brace (BRB) is a proprietary system that is currently supplied in the United States by three main manufacturers: (1) Nippon Steel Engineering Co., (2) CoreBrace, and (3) Star Seismic. The BRB's manufactured by each of these three companies are similar in concept; however, each has specific details that will have an impact on the analysis and design of the retrofit scheme. The following presents a summary of the background information for each of these brace manufacturers:

Nippon Steel Engineering Co.

- Established in late 1980's in Japan (over 16 years of experience in Japan)
- Introduced to the United States in 1999 (7 years of experience in United States)
- Total number of projects = 400 in Japan; over 50 in U.S.; 15 seismic retrofit projects in U.S.
- Approved for use in 7 OSHPD projects.
- Total number of braces tested = approx. 200
- Consists of core steel plates coated with an unbonding material and then enclosed by mortar and a steel tube to prevent buckling.
- Connection configuration is typically bolted.
- Cost of braces is approximately \$8-9/kip of brace capacity.
- U.S. Patent for Unbonded Brace

Star Seismic

- Established in 2002 (4 years of experience) based in Utah
- Total number of projects = 23
- Approved for use in 1 OSHPD project.
- Total number of braces tested = approx. 42
- Braces are similar in concept to the Nippon Steel braces. For larger braces (capacity greater than 500 kips), the overall brace is comprised of smaller braces in parallel.

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- Connection configuration can be welded or pin connection. For pin connection braces, the core plates are welded to a cap plate and pin connection clevises are also welded to the cap plate for the connection.
- Cost of braces is approximately \$8-9/kip of brace capacity.
- U.S. Patent on Cap Plate

CoreBrace

- Established in 2002 (4 years of experience) based in Utah
- Approved for use in 1 OSHPD project.
- Total number of braces tested = 46
- Brace is similar in construction to the Nippon Steel braces.
- Connection configuration can be "lug" or pin connection.
- Cost of braces is approximately \$7/kip of brace capacity.

Based on our past experience in designing retrofit projects using buckling restrained braces and our review of the qualifications of the brace manufacturers, we recommend Nippon Steel for this project. The reasons supporting our recommendation are as follows:

1. Project Experience: Nippon Steel has delivered BRB's on 400 projects in Japan and over 50 projects in the United States, of which 15 projects are seismic retrofit projects. Furthermore, Nippon Steel has gained approval from the California Office of Statewide Planning and Development (OSHPD) on seven projects, whereas the other brace manufacturers have only been approved on one project each.
2. Laboratory Testing: Nippon Steel has performed laboratory testing on nearly 200 BRB's, including testing on uniaxial and subassembly configurations, testing of brace of widely varying brace capacity and brace lengths. The extent of testing performed on the Nippon Steel BRB's is on the order of 500% more than that of the other brace manufacturers.
3. Axial Strain Capacity for Large Braces: The Nippon Steel BRB's have been tested to axial strain exceeding 2% for large capacity braces (greater than 700 kips). Star Seismic BRB's have been tested to only 1.5% axial strain braces with a capacity greater than 700 kips. Although the design of the BRBF system for this project has not been completed and the maximum axial strain demands on the braces have not been determined at this time, the larger axial strain capacity of the Nippon Steel BRB's provides additional flexibility for the design.
4. Solid Steel Construction: Nippon Steel BRB's utilize a core plate that is cut from a single piece of steel, with no splices or joints in the longitudinal force path of the brace. This eliminates the possibility of introducing imperfections at such joints and improves the reliability of the braces. For the Star Seismic braces using a pinned-end connection, the core plates are welded to a cap plate and pin connection clevises are also welded to the cap plate for the connection.
5. U.S. Patent: Nippon Steel BRB's have a U.S. patent for the unbonded brace. Star Seismic has a U.S. patent for their end cap plates and Core Brace has only U.S. patents pending.

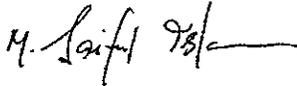
Mr. Ross Cranmer
August 28, 2006
Page 3

Huntington Beach City Hall Admin Building Seismic Retrofit
Background and Recommendation for Selection
of Buckling Restrained Brace Manufacturer

Please do not hesitate to contact us should you have any questions or need anything else from us.

Sincerely,

SAIFULBOUQUET, Inc.

A handwritten signature in black ink, appearing to read "M. Saiful Islam" followed by a stylized flourish.

Saiful Islam, Ph.D., S.E.
Managing Principal

September 6, 2006

Mr. Ross Crammer
Director of Building & Safety Department
City of Huntington Beach
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648

Subject: Peer Review Seismic Engineering Services-Sole Sourcing Request
City Hall Administration Building Seismic Project, City of Huntington Beach

Dear Ross,

We are in receipt of a letter from Saiful/Bouquet Structural Engineers (SBI) dated 8/28/2006 recommending the use of Buckling Restrained Braced Frames System (BRBF) manufactured by Nippon Steel Engineering Co. of Japan. I have also conducted a telephone conversation today with Dr. Saiful Islam of SBI regarding the same subject.

There are two questions that need to be addressed:

The first question is: "Do we need to decide on a particular vender to work with the design team to develop a cost-effective and sound design?"

There are three venders in the market today as explained in SBI's letter. All these venders have produced good products that were tested and used in actual seismic retrofit applications in the U.S. However, every manufacturer has its own proprietary braces that have unique material and sectional properties. It is not feasible to provide three designs (one for each manufacturer) since this is a timely process that could result also in confusing bid documents, and added cost of the design process.

The clear answer to this question is that IDS feels that it is for the best interest of the City of Huntington Beach to pre-select a particular manufacturer of the BRBF system, as soon as possible. A delay on this decision may result in a delay of the schedule of the project. It is also noted that there is a lead time to produce the braces. Therefore, it is advisable to have an early procurement of the braces to avoid construction delay. It is noted that the process of selecting damping, base-isolation devices, and/or other proprietary structural members is well established in the construction industry, which is evident in several public projects that used the same procurement procedure. However, we understand that the issue of a sole source selection of a manufacturer could have its purchasing and legal concern, which has to be investigated by the City of Huntington Beach. In summary, IDS does not object to the request by SBI to pre-select a specific braced system to start their design.

The second question that needs to be answered is "Does IDS agree that the BRBF system produced by Nippon Steel Engineering Co. is the best choice for this project?"

From SBI perspective they have indicated the following:

Peer Review Seismic Engineering Services-Sole Sourcing Request
City Hall Administration Building Seismic Project

- (1) SBI has used this system successfully on a least two previous projects.
- (2) SBI has an excellent relationship with the technical staff of Nippon Steel. Timely response from Nippon will facilitate meeting the schedule.
- (3) SBI will be more efficient in designing this system compared to other systems since there will be no learning curve.

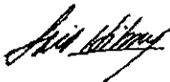
Based on the telephone discussion that I have with Dr. Islam today, I indicated the following:

- (1) Because of the Federal funding of this project, I would like to get assurance that there is no restriction of sole sourcing of a Japanese product, while there are equivalent products (in terms of cost and performance) made in USA.
- (2) I wanted to get a preliminary design of the connection of the braces and a decision on whether these connections are pinned connection or rigid connections. My preference is for a pin connection since it results in a smaller demand on the structural joints with less secondary effects. The size of the connections also becomes smaller.
- (3) I have also indicated that there is a recent research by Dr. Atani, and Dr. Buckle of University of Reno that shows the testing of Nippon BRBF using pinned connections. Dr. Islam requested that I forward a copy of this recent publication and he will look at it and discuss it with Nippon. If Nippon doesn't support a pin connection then I would like SBI to submit a preliminary size of the brace connection and the impact on the system configuration.
- (4) Finally, I also raised the issue of the Chevron brace design and that the BRBF system, in particular the Nippon Steel Section, has different yield properties in tension and compression of almost 15%. The design should accommodate for this variance. Dr. Islam acknowledged that he is well aware of this and that the new concrete exterior frames will accommodate for this effect. Meanwhile, a copy of the new testing reference of the Nippon Steel will for scanned and forwarded to hime shortly.

In summary, IDS does not object to selecting Nippon Steel as the manufactures of the BRBF pending the resolving of the issues indicated above. I hope we will have further discussion on our September 11th project meeting with the City

Please do not hesitate to contact us for any further clarification of the above.

Very Truly Yours,
Integrated Design Services, Inc.



Said Hilmy, Ph.D., S.E.
Principal

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September 13, 2006

Mr. Ross Crammer
Director of Building & Safety Department
City of Huntington Beach
2000 Main Street
P.O. Box 190
Huntington Beach, CA 92648

Subject: Peer Review Seismic Engineering Services-Sole Sourcing Request
City Hall Administration Building Seismic Project, City of Huntington Beach

Dear Ross,

The purpose of this letter is to document our technical discussion during the meeting on September 12, 2006 at the City regarding the subject project. The first part of the meeting addressed the use of sole source manufacturer of the Buckling Retrained Braced Frames (BRBF). Saiful/Bouquet (SBI), the structural engineer for the project, has recommended the use of a bracing system produced by Nippon Steel Engineering Co. of Japan. IDS submitted a letter to the City on September 6, 2006 to address SBI's request. Four issues were identified as major concerns/ considerations that IDS wanted to discuss and clarify with the project team before concurring with SBI's request.

The first issue was to verify with FEMA that procurement of a foreign product based on sole source is acceptable in a federally sponsored project. The City has submitted a request to OES/FEMA and the answer is still pending.

The second and third concerns are related to (1) the size and configuration of the connections and (2) reaching a decision on a pinned vs. rigid (bolted) connection. SBI indicated that their preference is to use bolted connections. SBI acknowledged that a pin connection has been used in past projects that involved Nippon braces. In support of SBI's preference, they submitted a letter from SEI Inc., which is the Nippon Technical representative in US, recommending the use of bolted connection due to its robust configuration, more stability, more redundancy, and greater tolerance during construction. In addition, SBI presented preliminary sizes of the brace configuration which were aesthetically acceptable to the architect and the City of Huntington Beach.

The last concern that was indicated in IDS' letter was related to variance of the tension/compression capacity of the braces that should be considered in the design of the Chevron system configuration. SBI is aware of this design issue and concurred that it will be considered in the design.

In light of the above discussion, IDS has indicated in the meeting that all the technical issues related to IDS' September 6, 2006 letter have been resolved to IDS' satisfaction. As noted above and discussed in the September 12th meeting, the issue related to Federal guidelines on procurement of sole source foreign vendors has still not been resolved.

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Peer Review Seismic Engineering Services-Sole Sourcing Request
City Hall Administration Building Seismic Project

In summary, IDS does not object proceeding with the design based on Nippon's braces, from a technical point of view.

It is a pleasure to participate on this important project. Please do not hesitate to contact us for any further clarification of the above.

Very Truly Yours,
Integrated Design Services, Inc.



Said Hilmy, Ph.D., S.E.
Principal

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ATTACHMENT 2

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TRANSMITTAL

FACSIMILE NO: 213-688-7935

DATE: March 12, 2007

TO: Ross Cranmer
Director of Building and Safety
City of Huntington Beach
email: rcranmer@surfcity-hb.org

CC: NSC-Toyoki Kuroiwa; SIE-Ian Aiken; Mitsui Tokyo-TKICJ
SBI – Matt Skokan; IDSI – Michael Wolfe

FROM: Marcus Daniel
Phone: 213-896-1142
email: m.daniel@mitsui.com

RE: **REQUEST FOR QUALIFICATIONS AND PRICING
HUNTINGTON BEACH CITY HALL
BUCKLING RESTRAINED BRACES, UNBONDED BRACES™**

With reference to our discussion on February 20, 2007 of various aspects of our formal bid to supply Unbonded Braces™ to the Huntington Beach City Hall retrofit project, please find attached our amended Terms & Conditions. The document has been revised in accordance with the requirements of the revised specification section 05125 – Buckling Restrained Braces received from Saiful-Bouquet Structural Engineers on 2/20/07, and addresses each of your questions regarding: Price Validity Term, Specifications and Warranties.

The following points are noted:

a. Price Validity

At your request, the price validity period has been revised from thirty days after quotation, to a fixed date of August 31, 2007. As you may know, in the structural steel industry it is quite unusual to quote a fixed price for such an extended validity period, nonetheless, we recognize the City's requirements for the project and are willing to do so. We request, however, that in the event that there are significant material price fluctuations in the marketplace, that our price be adjusted reasonably and fairly by mutual discussion.

b. Warranty

We will provide a written warranty in accordance with the requirements defined in the revised specification. With regard to the paint, we note that touch-up after shipment and delivery, as well as the proper application of intermediate and finish coat systems on-site are beyond our scope, both of which implicitly affect the long-term performance of our shop-applied primer paint. For these reasons, the performance of the primer paint is excluded from the warranty.

Documents attached are subject to the following:

This document contains confidential and/or privileged information that is the exclusive property of the Nippon Steel Corp. which has authorized Mitsui Steel, Inc. to make this disclosure on their behalf. We are disclosing this information on the understanding that this information, or any part or derivative thereof, will not be copied, reproduced, used

without our express written consent, provided to a third party or provided to personnel who do not require access in order to carry out their responsibilities. In the event that the law requires the disclosure of this information, we require advance notice of such disclosure. This information, or any part or derivative thereof, may not be disclosed to any existing or potential acquirers, merger candidates, joint ventures, or other partners that are substantially involved in the same business as the Nippon Steel Corp. By accepting this information you agree to treat this information as confidential and privileged, and will take reasonable steps to keep the information confidential. The confidential and/or privileged status of this information is not void even if the public domain embraces more general information or if the public domain contains the individual elements of a confidential combination. Submission of this information does not constitute a waiver of confidentiality or privilege.

Thank you.

SUBJECT TO CONFIDENTIALITY STATEMENT ON COVER SHEET

March 12, 2007

Terms and Conditions for Supply of Unbonded Braces™

Huntington Beach City Hall Seismic Upgrade

Huntington Beach, California

I. Definitions.

- A. "Buyer" refers to [_____].
- B. "Global Buckling" means a buckling mechanism that develops over the entire length of an element.
- C. "JIS" means Japanese Industrial Standard.
- D. "Manufacturer" refers to Nippon Steel Engineering Co., Ltd., its agents and affiliates.
- E. "Structural Engineer" refers to Saiful/Bouquet Consulting Structural Engineers, Inc.
- F. "Seller" refers to Mitsui Steel, Inc.

II. Price.

PRICING TERM: DUTY PAID, DELIVERED TO JOBSITE (FREE ON TRUCK)

Unbonded Braces™, 40 Pieces	US\$ 183,519.00
Signature and seal for design drawings and calculations	<u>US\$ 3,000.00</u>
Total:	US\$ 186,519.00

- A. Payment: Net Cash 30 days after delivery to jobsite.
- B. The price as set forth in the "Pricing Terms" is valid until August 31, 2007.
- C. All prices quoted in the Pricing Terms and throughout these Terms and Conditions are only for the Unbonded Braces, any other items that are specified in the Pricing Terms, shop drawings, and delivery of the foregoing. Specifically excluded from the Pricing Terms are the following:
 - 1. Splice plates;
 - 2. Any field or touch-up painting;
 - 3. Any other testing;
 - 4. Connection design;
 - 5. High-strength bolts; and
 - 6. Sales tax.

- D. Warranty (Specification Section 05125.1.5.A).

A written warranty will be provided that warrants the Unbonded Braces™ supplied to the Project will be free from defects in material and workmanship and that they meet the performance requirements of the specification for a period of twenty (20) years, from the date of purchase. All repairs and/or replacements of any defective brace or parts thereof within the warranty period shall be at the Seller's expense, including shipping, but not including installation or any other consequential costs. This warranty will not extend to the paint system applied to the Unbonded Braces™, and is conditional upon: (a) provision of adequate protection to the end portions of the braces (to be designed and provided by others), and (b) the implementation of an appropriate maintenance and re-painting program throughout the design life.

III. Referenced Documents.

This quotation references the following documents:

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- A. **Structural Drawings:**
Braced frame elevations at Lines M, 13, Y and 17; Fourth floor framing plan, received 1/26/07
Unbonded Brace Properties, dated 1/26/07
- B. **Specification Documents:**
Section 05125 – Buckling Restrained Braces, dated 1/16/06

IV. Technical Specifications.

A. Core Plate and Rib Plates

1. Materials.

JIS G 3136 SN400B, "Rolled steels for building structure"(similar to ASTM A36)

Yield strength	Upper limit:	355 N/mm ² (51.5 ksi)
	Lower limit:	235 N/mm ² (34.1 ksi)
Tensile strength	Upper limit:	510 N/mm ² (74.0 ksi)
	Lower limit:	400 N/mm ² (58.0 ksi)

or

A36, "Specification for Steel"

Yield strength	Lower limit:	36.0 ksi
Tensile strength	Upper limit:	80.0 ksi
	Lower limit:	58.0 ksi

Material of the above grade will be selected to satisfy the yield stress requirements of 05125.2.5.B.

B. Tube

1. Material.

ASTM A500 Grade B, "Specification for cold-formed welded and seamless carbon steel structural tubing in rounds and shapes."

Yield strength:	Lower limit:	46ksi
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C. Connections

1. Connection Design.

The connections to the Unbonded Brace shall be designed by the Structural Engineer.

D. Clearance between flash of core plate and mortar.

The clearance between the core plate flash and the mortar shall be designed by the Manufacturer to provide a maximum axial deformation capacity corresponding to 3.3 percent strain of the yielding length of the Unbonded Brace core plates.

E. Global Buckling.

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Buckling length of Unbonded Brace shall be defined by the Structural Engineer and Unbonded Braces shall be designed by the Manufacturer to resist global buckling in accordance with the following equation:

$$\pi^2 EI / L_k^2 > \alpha \times P_y \quad \text{where:}$$

E = Young's modulus of steel tube

I = Moment inertia of steel tube

L_k = Buckling length of Unbonded Brace (work point to work point length is recommended)

α = Safety factor against buckling of steel tube = 1.5

P_y = Expected axial yield force of steel core plate

F. Mortar.

Minimum compressive strength: 21.0 N/mm² (3,045 psi) at 28 days.

G. Welder's Qualification.

Welder's qualifications and welding procedure specifications shall comply with AWS.

H. Fabrication.

Fabrication of Unbonded Braces will be in accordance with the relevant Japanese Industrial Standards and the Manufacturer's company standards, for all processes including but not limited to cutting, drilling, assembly, welding and inspection. Processes, including but not limited to the method of grouting, will be disclosed to Buyer on the Manufacturer's sole discretion. No specific actions will be taken in the Unbonded Brace production process to relieve residual stresses.

I. Corrosion Protection.

Anticorrosive paint shall be applied by Manufacturer to the outside of the steel tubes in accordance with the following:

Surface cleaning: SSPC SP6

Paint: Tnemec 94-H20 Hydro-Zinc (DFT: 2.5 – 3.5 mils (65-90 μm))

Any additional painting requirements specified may be subject to additional charges.

J. Treatment of Friction Surface.

Friction surfaces of steel core plate shall be SSPC SP6. No special corrosion protection of the friction surfaces will be made by the Manufacturer or Seller to prevent corrosion during delivery. Removal of any rust that forms on the surfaces of the cruciform end connections is the sole responsibility of Buyer and should be undertaken before erection of the Unbonded Braces.

K. Inspection.

1. All inspections of Unbonded Braces shall be performed in accordance with JIS and the Manufacturer's company standards.
2. Dimensional tolerances shall comply with Attachment A-1.
3. Welding inspection for fillet welds and partial penetration welds, if any, shall be visual only.

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4. Inspections done by the Buyer or its representative shall be executed for the final production only.

L. Treatment for Exposed Structure

No special finishes, such as the grinding smooth of exposed welds, shall be provided for braces in exposed conditions. Any additional requirements for exposed conditions or AESS may be subject to additional charges.

V. Submittals.

The following documents shall be submitted as part of the supply of the Unbonded Braces:

- A. Shop drawings;
- B. Mill certificates for materials
- C. Quality control plan;
- D. Welder's certificates;
- E. Brace qualification test report;
- F. Brace structural design calculations;
- G. Manufacturer's certification letter (stating that the braces meet all requirements in the specification); and
- H. Brace manufacturing and delivery schedule.

VI. Delivery, Unloading and Storage.

A. Delivery.

Unbonded Braces will be transported via open-top container packaging, and shall be considered delivered when such open-top containers arrive at the job site. Seller agrees to use its commercially reasonable efforts to deliver the Unbonded Braces in prime condition. In the event of damage to the braces during transportation, Seller is responsible for the brace material cost but not responsible for any consequential damages.

B. Unloading.

Unloading of the Unbonded Braces at the job site is the Buyer's responsibility alone, and cargo shall be discharged at the sole risk and expense of the Buyer. Containers shall be discharged within two hours of time of delivery. Buyer is responsible for container detention charges if unloading is not completed within two hours.

C. Storage.

Storage of the Unbonded Braces is exclusive responsibility of the Buyer. Seller assumes no responsibility for damage resulting from improper storage of the braces.

VII. Schedule of Work.

Delivery of the Unbonded Braces is contingent upon Buyer's submission to Manufacturer of the final design documents for the material order and shop drawings.

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The Unbonded Braces will be delivered to site beginning 12 weeks after confirmation of final brace lengths.

Nippon Steel Engineering Co., Ltd. will work with the project team to develop a detailed delivery schedule that meets the needs of the project.

VIII. Specific Disclaimers.

- A. **WARRANTY DISCLAIMER.** Buyer agrees that Manufacturer and Seller make no representations or warranties, express or implied, as to the merchantability, fitness for any particular purpose or any other matters not expressly contained in these Terms and Conditions. No representation or statement not expressly contained in these Terms and Conditions shall be binding on Manufacturer or Seller as a representation or warranty or otherwise. No warranties provided for in the Uniform Commercial Code or the United Nations Convention on Contracts for the International Sale of Goods shall be implied in connection with these Terms and Conditions or any sale of Unbonded Braces made pursuant to them and all such implied warranties are hereby expressly disclaimed.
- B. **DISCLAIMER OF RESPONSIBILITY FOR ENGINEERING ERRORS AND OMISSIONS.** Neither Manufacturer nor Seller has undertaken to review or assess the accuracy of the specifications, measurements, drawings, or any other information provided by Buyer or the Structural Engineer and are not responsible for any errors and/or omissions in any such specifications, measurements, drawings, or other information. Any review or assessment conducted by Manufacturer or Seller in the course of designing, manufacturing, inspecting, testing, delivering or installing Unbonded Braces shall not constitute the voluntary assumption by Manufacturer or Seller of any duty to ensure the accuracy of any information supplied to Manufacturer or Seller by Buyer, the Structural Engineer, or any other party.
- C. **LIABILITY DISCLAIMER AND LIMITATION.** In no event shall Manufacturer or Seller be liable for special, exemplary, punitive, indirect, incidental or consequential damages (including without limitation any claim for lost profits), whether in contract, warranty, negligence, tort, strict liability or otherwise, arising out of the use or sale of the Unbonded Braces or any other product or instruction supplied under these Terms and Conditions, and in no case will Manufacturer or Seller be held liable for any amount exceeding the price paid for the materials hereunder.

Instructions for Handling and Use of Unbonded Braces

I. Unloading and Storage.

- A. **Unloading.** Unbonded Braces should be unloaded one by one to prevent potential damage to mortar.
- B. **Storage.** Unbonded Braces should be stacked no higher than four units high, and with wooden spacers between layers, and between the bottom braces and the ground. They should not be stacked directly on the ground. Unbonded Braces should be stored indoors. If Unbonded Braces are stored outside, they should be covered by a tarpaulin or other means of cover in order to prevent exposure to sunlight, rain, and extreme temperature (lower than 25 °F (-4 °C) or higher than 110 °F (43 °C)).

II. Limitations on Use.

- A. **General.** Unbonded Braces are intended to be elements of lateral force-resisting systems in building structures. The Structural Engineer is expected to confirm the design demands on the Unbonded Braces, including low- and high-cycle fatigue conditions, against performance information provided by the Manufacturer. The usual application of Unbonded Braces is to building structures. The suitability of Unbonded Braces for application to structures such as bridges, industrial structures, or towers must be confirmed with the Manufacturer.
- B. **Performance.** If properly selected, applied (in accordance with II.C) and handled (in accordance with II.D), the performance of Unbonded Braces is warranted under the following condition:
1. **Maximum Force.** Global buckling of Unbonded Braces will not occur under a force corresponding to the core plate material yield strength (i.e., 235 N/mm² (34.1 ksi) and 325 N/mm² (47.1 ksi) for SN400B and SN490B, respectively).
- C. **Application of Specific Forces or Conditions.** Application of one or more of the following forces or conditions to Unbonded Braces may affect their performance. Manufacturer is not responsible for the performance of Unbonded Braces if they are subjected to any of the following:
1. **Applied Forces.** Unbonded Braces should be subject to axial force only. Posts, beams, girts, mullions, or any other type of structural or non-structural component shall not be connected to Unbonded Braces.
 2. **End Rotation.** See Attachment-2. The relative end rotation of Unbonded Braces due to lateral deformations of the main structural frame shall be limited to less than 2.5/100.
 3. **Temperature Extremes.** Unbonded Braces should not be used in conditions where the temperature is less than 25 °F (-4 °C) or more than 110 °F (43 °C).
 4. **Environment.** Unbonded Braces shall not be used, without adequate protection, in an atmosphere that deteriorates their capability or quality, such as an exposed condition to weather, corrosive atmosphere, etc.
 5. **Mechanical Vibrations.** Unbonded Braces should not be subject to mechanical vibrations or other high-cycle fatigue conditions.

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6. **Wind Forces.** Unbonded Brace yield forces shall be determined by the Structural Engineer to ensure that the braces do not yield under wind forces.

D. Handling and Storage.

1. **Lifting.** Unbonded Braces shall be lifted only by attachment to lifting lugs on the tube provided by Manufacturer (see Attachment A-1). The lifting lugs may be removed after installation of the Unbonded Braces, if required. Removal may be by means of saw-cutting or grinding but not using gas or heat.
2. **Forces during handling.** Unbonded Braces shall not be subjected to accelerations greater than 0.01g and/or impact forces during handling.

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Project: Sample

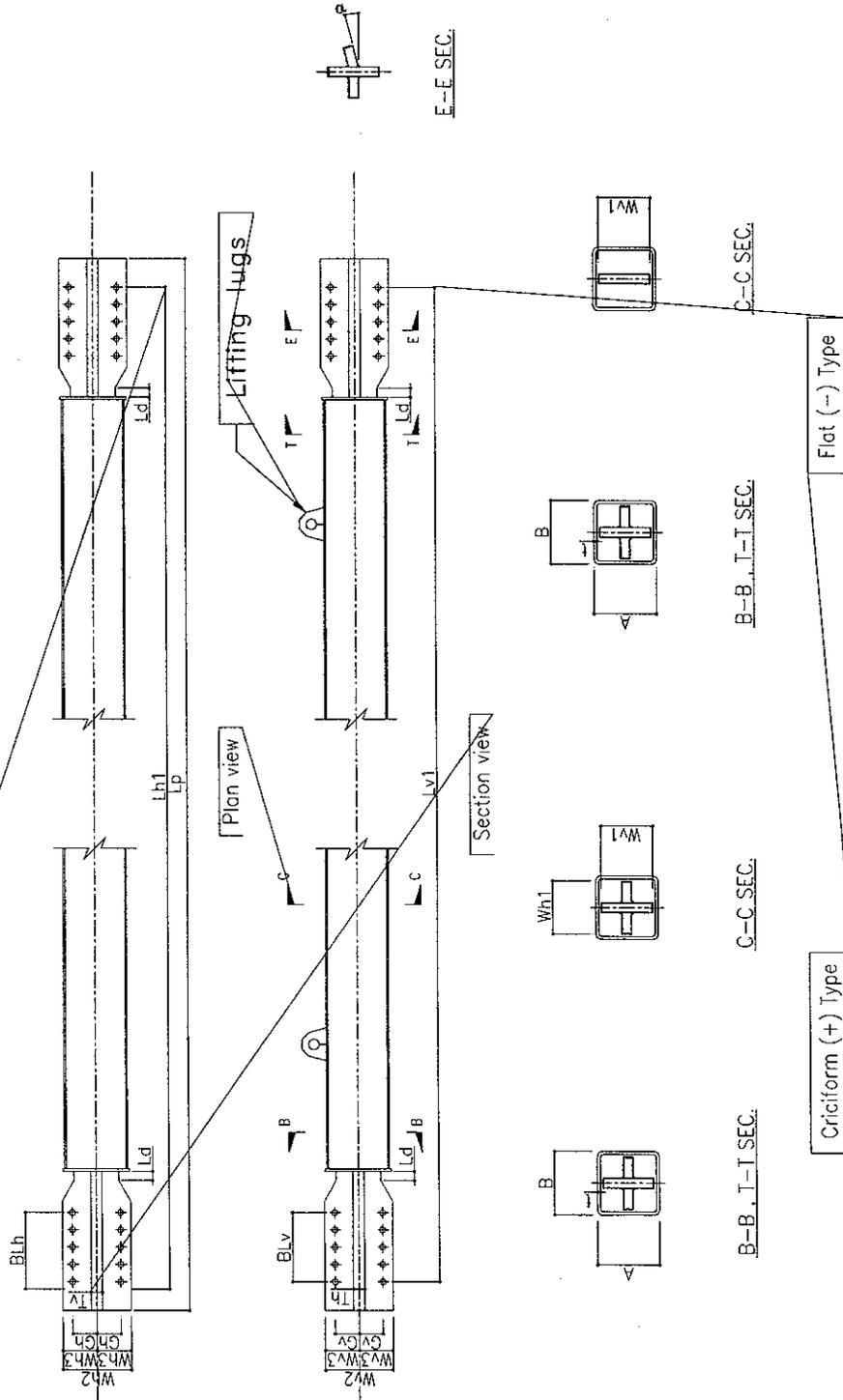
Date of inspection :

Inspector :

Unit : mm

Description Tolerance or requirement	Upper limitation		Lp	Lht	Lv1	Wh1	Wv1	A, B, t		Th	Tv	Wh2	Wv2	Wh3	Wv3	Gh	Gv	Blh	BLv	α	Bolt holes	Treatment of finction surface	Appearance of product			
	Upper limitation	Lower limitation						JIS Standard	JIS Standard																	
Timing of inspection	Assembly of core plate only																						Procurement of tube		Before transportation	
Level of inspection	A (Difference between required value and actual value for all products shall be described after measurement and judgement.)																						B (Passing mark "○" shall be put after inspection and measurement.)			
Member mark	V1-1	+1	+1	±0	+1	+1	+1	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○			

Dimensional Accuracy and Visual Inspection



Attachment A-2

